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Capability Needs Near and Far

25 April 2013

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Distribution A. Released for Public Distribution

What are we hearing about the next war?

The Faulty Narrative

Easy War

- Leverage advanced technology and precision-guided munitions from Air and Sea to neutralize or compel adversary
- Avoid costly commitment of ground forces and loss of life – "no more ground combat"
- Maintain global commons (economy) and achieve National Security through deterrence, coercion, and punitive/preemptive strikes
- Cheap, quick, bloodless

"Every attempt to make war easy and safe will result in humiliation and disaster."
General T. Sherman

The Reality

War is Complex

- Ignores lessons from past (WWII, Vietnam, Kosovo, Post DS/DS, OIF, OEF)
  - munitions alone do not achieve results
- Strike alone not decisive – best maintains status quo (instability), worst escalates situation
- Unrealistic Operational Environment
  - No guarantee adversary will be compelled by strikes and no guarantee enemy can be effectively targeted
- Collateral damage and impact on populace (negative media)
- No shaping before or stability after
  - Fails to address cause of instability

"Look askance at idealized, triumphalist, or ethnocentric notions of future conflict that aspire to upend the immutable principles of war: where the enemy is killed, but our troops and innocent civilians are spared. Where adversaries can be cowed, shocked, or awed into submission, instead of being tracked down, hilltop by hilltop, house by house, block by bloody block."
SECDEF Robert Gates, National Defense University (NDU), 29 SEP 2008

The Complex Environment

Essential Elements of the Complex Environment

- **A multitude of Independent Actors with No Central Control.**
- **Sometimes a strategy – w/strategic lever to deny US freedom**
- **Threat, Malicious, and Neutral/Friendly Actors -variable**
- **Technology Enables Effective Action – Violent and Nonviolent – and Rapid Adaptation**
- **Lack of Governance or Rule of Law**

Ends

- Wealth
- Resources
- Political authority
- Influence
- Sovereignty
- Identity
- Legitimacy

Ways

- Competition
- Cooperation
- Conflict

Means

- Attack the "will"
- Complexity – Chaotic Conditions – Anti-access
- Asymmetry

Characteristics

Lethal

- Well Armed
- Technology Proliferates to Many
- Non-linear Relationship between Economic and Military Power

Durable

- Victory Ill Defined
- Blurred Transitions, e.g. Conflict to Post Conflict.
- Unexpected Friction

Asymmetric

- Sidestep US Preferred "Way of War"(Lever)
- Deny ISR & Strike Options
- Exploit Cyber
- Unforeseen Effects from Actions

FY14 and Beyond Warfighter Needs

NEAR TERM

- Replicate complex operational environments
- On-demand virtual training and rehearsal
- Virtual human (combatants, non-combatants, personal)

Training

- Standard and shareable geospatial data
- Highly mobile and scalable Command Post
- Dismounted mission command away from vehicles

Mission Command

- Standoff CBRN/Explosive detection
- Standoff CBRN/Explosive mitigation

Protection

- Lightweight, improved vehicle protection
- Scalable soldier power solutions (72 hours)
- Enemy detection (buildings/underground)

Maneuver

- Extended range precision fires (>220 KM)

Fires

- Control non-compressible bleeding
- Rapid characterizations of pathogens

Sustainment

- Standoff and reliable personnel identification

Intelligence

FY14 and Beyond Warfighter Needs

FAR TERM

Training	• Adaptable, learner-centric, networked tactical trainer • Rapid capability for synchronized live training
Mission Command	• Airspace control in unified actions • Location and navigation in complex environments
Protection	• Standoff route clearance and threat detection • Enhanced situational enemy awareness and enemy capabilities
Maneuver	• Detect, recognize, and identify targets for lethality overmatch • Acquire and identify targets beyond enemy direct fire ranges
Fires	• "Electric fires"
Sustainment	• Rapidly and inexpensively construct permanent and expeditionary facilities • Rapidly assess, upgrade, establish airports and seaports of debarkation
Intelligence	• Near real-time data processing and exploitation • Fully integrated human terrain planning tools

Deep Futures:

- **Advanced Materials** – "bullet proof soda can"
- **Biological Sciences** – human performance enhancement
- **Quantum Computing** – hyper speed processing

Technological "Wildcards" that could alter the Gaps

Probability

Low Severity / High Probability • Jamming • 8Hz Thermobarics • 4th Generation Chem Weapons	**High Severity / High Probability** • Global Sensor Grid • EMP • Robotics • Nano-Materials • Fast Lasers • Machine Intelligence
Low Severity / Low Probability • Nanites • Low Power Electro Magnetics Against Brains and Hearts • THz Weaponry	**High Severity / Low Probability** • Quantum Communications • Slingatron • Corrosives • Low Energy Nuclear Reaction • 4th Generation Nuclear Weapons • Open Blood-Brain Barrier

Severity

Questions?